



TITLE:

Application of the Method of Fermentation-retting. : The Purification of Lac by Fermentation. (Part II)

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33. Application of the Method of Fermentation-retting.

The Purification of Lac by Fermentation. (Part II)

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It was found in the previous paper that nitrogen-impurities in B-seed of lac were remarkably attacked by fermentation with the bacteria *Pseudomonas myxogenes* sp., isolated by us.

In order to ascertain what sort of nitrogen was attacked by the fermentation, resins and coloring matters of the B-seed were previously removed by repeated resins and coloring matters of the B-seed were previously removed by repeated alcohol extraction at room temperature until the average yield of the residue attained to 23% by weight.

According to the kinds of B-seed, total nitrogen of the residue above mentioned was found to vary from 3.9 to 5.8% on dry basis. However, any noticeable difference in the proportion of the form of nitrogen was never observed, viz. 5% K_2SO_4 soluble nitrogen including albumin, globulin, proteose, peptone and non-protein, hordein-nitrogen being extracted by hot 80% alcohol, the residual nitrogen (expressed as glutelin-nitrogen) were observed to be 9.3~10.6%, 3.5~3.6% hot alcohol soluble and of 85.9~86.7% of the total nitrogen respectively.

During 4 day fermentation of the sample in Speakman's solution at 35°C, some remarkable decompositions of dry matter, total nitrogen, hordein nitrogen and salt soluble nitrogen were observed to be 25%, 23.5%, 95.2% and 50.0% respectively, while glutelin nitrogen was attacked only 17.7%.

In order to clarify, furthermore, the nature of glutelin nitrogen, extraction of the glutelin fraction was made by 5% NaOH solution. It was found that greater amount (nearly 97%) of glutelin nitrogen dissolved in NaOH, and presence of chitin (nearly 1.5% on dry basis) was ascertained by Proskuriakow's method.

From these results, We would conclude that more advanced purification of B-seed would be capable when more suitable conditions of fermentation were found, since decomposition of glutelin nitrogen attained as high as 45.6% by 7 day fermentation.

34. On the Protease and Amidase Actions of Bac. Natto.

Yuki Ito.

Casein, gelatin, peptone and protamine were hydrolyzed respectively by autolysate or acetone powder of Bac. Natto between pH 5.0 and 9.0 (the optimum pH 7.5). The hydrolysis value (pH 7.5) was found to be as follows: casein > gelatin > fibrin >